**Unreal Engine**

**Basic Stuff**

W → Move

E → Rotate

R → Scale

ALT + Move object→ Copy object

Show the Output Log and the Message Log → Window → Developer tools

In editor preferences → Asset open → Open Location → Main Window

**Materials**

In content Browser → Add/Import → Material. Give it the naming convention m\_Name → You add a new Material.

Inside the material → Right click the background zone and you can add types, variables etc like Vector 3 for the base colour of the material which is going to be RGB

Right click on it → Convert to parameter -->Use this Vector 3 as a base material for all the materials. This material is going to be the base material.

Now we can create instances of this material with different colours and apply it to our scene.

In the content browser → Right click material → Create a material instance

**Blueprints**

Is like a programming language where you grab nodes and connect them.

**Blueprint World**

When we create a World Blueprint we can select the Game Mode of this “World” (Settings → World Settings → Game Mode). Also here we can modify everything for this World.

When Creating the new Character, we go to our Blueprint of our World and Change the Default Pawn Class and put our new Character Mario.

**Blueprint Character**

Actor → Not playable character (Coins)

Pawn → Playable character (Mario)

Collider for a basic Character → Add New Component → Capsule Collision

We can add a new Component type Camera that is automatically going to be attach to our Character. This way when we press Play, now we will have a camera that will follow our character.

If we want to add gravity, we need to add physics to our Capsule: Select Capsule → Physics → Simulate Physics.

Now if we want our character to collide with the platform: Collision → Collision Presets → Pawn.

Also create a static mesh so we can add material and fit into our Capsule

If we don’t want to collide with the object → OverllapAll in Collision Presets

**Movement**

To add bindings for movement → Edit → Project Settings → Input → Bindings → Here we can add left or right and the keyboard or controller to use. We can use the same binding to move left just by making it negative. This way anytime we press the button it will move.

Inside the character blueprint → Event Graph → Here we will “code” with nodes and links.

Every time we want to add a new node, we just right click and add the one we want.

Function node → Returns a value

Event node → Triggers when the button is pressed

Alt + Click → Remove Connections

Right Click Background → Move around

F9 → Add a breakpoint for debugging.

Vectors are structs, so we can right click them and split his components.

Add Variables → Left Window → Variables → Add Symbol. You can change the type of the variable at the right.

GetWorldDeltaSeconds → Is like the elapsedSeconds. You use this to calculate the speed for example.

In the structs we can Promote to variable (right click the parameter), so we convert one of the parameters in a variable.

RayCasting for checking when we are hitting the floor (sphereTraceByChannel)